

CLAIMS

We Claim:

1. A method for reducing polarization mode dispersion in drawn optical fiber comprising the steps of:

5 feeding an optical fiber preform of a predetermined size into a furnace at a predetermined downfeed rate;

drawing an optical fiber from the optical fiber preform at a draw rate of at least 10 meters per second; and

10 varying the draw rate to maintain a substantially constant fiber diameter while maintaining the predetermined downfeed rate constant.

2. A method for reducing polarization mode dispersion in drawn optical fiber according to claim 1, wherein the draw rate is greater than 14 meters per second.

15 3. A method for reducing polarization mode dispersion in drawn optical fiber according to claim 2, wherein the draw rate is varied between about 14 and 20 meters per second.

20 4. A method for reducing polarization mode dispersion in drawn optical fiber according to claim 1, wherein the draw rate is varied between about 14 and 20 meters per second.

25 5. A method for reducing polarization mode dispersion in drawn optical fiber according to claim 4, further comprising the step of defining at least one zone of draw speeds.

30 6. A method for reducing polarization mode dispersion in drawn optical fiber according to claim 5, wherein as the draw speed varies in each zone, the downfeed rate remains constant within each zone.

7. A method for reducing polarization mode dispersion in drawn optical fiber according to claim 6, wherein the downfeed rate is different for each zone.

5 8. A method for reducing polarization mode dispersion in drawn optical fiber according to claim 7, wherein as the draw rate changes from one zone to another having a higher range of draw speeds, the downfeed rate decreases.

10 9. A method for reducing polarization mode dispersion in drawn optical fiber according to claim 7, wherein as the draw rate changes from one zone to another having a lower range of draw speeds, the downfeed rate increases.

10. A method for reducing polarization mode dispersion in drawn optical fiber according to claim 1, wherein the fiber is spun as it is drawn.

15 11. A method for drawing optical fiber from an optical fiber preform comprising the steps of:  
feeding the optical fiber preform of a predetermined size into a draw furnace having a plurality of zones at a downfeed rate;  
drawing optical fiber from the optical fiber preform at a draw rate of at least  
20 10 meters per second;  
measuring the drawn fiber diameter and generating a signal representative of the measured diameter;  
comparing the generated signal to nominal fiber diameter value and generating a second signal representative of the difference of the comparison;  
25 sensing the draw rate to determine if it is within a range of predetermined speed;  
varying the draw rate based on the second signal to adjust the drawn fiber diameter; and  
varying the downfeed rate if the sensed draw rate is outside of the range.

12. The method of drawing optical fiber according to claim 11, comprising the further step of spinning the optical fiber as it is drawn.

5 13. The method of drawing optical fiber according to claim 11, wherein the draw rate comprises a plurality of ranges, each range comprising a predetermined range of draw speeds.

10 14. The method of drawing optical fiber according to claim 13, wherein as the draw rate is varied between the plurality of ranges, the downfeed rate is changed.

15 15. The method of drawing optical fiber according to claim 14, wherein the downfeed rate is maintained substantially constant while in each zone.

16. A method for reducing polarization mode dispersion in drawn optical fiber comprising the steps of:

feeding an optical fiber preform of a predetermined diameter into a furnace at a constant downfeed rate;

20 drawing an optical fiber from the optical fiber preform at a draw rate of at least 10 meters per second; and

varying the draw rate to maintain a substantially constant fiber diameter.